

UNITED STATES PATENT AND TRADEMARK OFFICE

I, Lydia Johnstone, translator to Siemens Shared Services / Siemens Translation Services, of Hyde House, Oldbury, Bracknell, England declare:

1. That I am a citizen of the United Kingdom of Great Britain and Northern Ireland.
2. That I am well acquainted with the German and English languages.
3. That the attached is, to the best of my knowledge and belief, a true translation into the English language of the accompanying copy of the Amendments to the specification filed with the application for a patent in Germany on 9 September 2003 under the number PCT/DE2003/002991 and the official certificate is attached hereto.
4. That I believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application in the United States of America or any patent issuing thereon.

Lydia Johnstone

For and on behalf of Siemens Shared Services/
Siemens Translation Services

The 17 day of March, 2005

Description

Method for mounting a switching module, switching module and pressure strip

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The invention relates to a method for mounting a switching module, in which a circuit support is inserted into a basic housing element and the basic housing element is closed with the aid of cover elements.

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The invention also relates to a switching module with an electronic component.

Electronic components have to be protected from environments that are subject to dirt and vibration. Therefore special 15 housings are developed to accommodate printed circuit boards for electronic transmission controllers, the dimensions and structure of said housings being tailored to the printed circuit boards used in each instance. Known housings only bear 20 a very slight mechanical similarity to each other. Also a specific, new set of tools is required to produce base plates, covers, plug connectors and further fixing elements for each type of housing.

However there is a demand for housings that are economical to 25 produce and simple to mount and are suitable for accommodating an electronic control system arranged outside the transmission. These housings may be sealed or unsealed. The structure of the device and the mounting process should be 30 achieved with the smallest possible number of components and work and process steps. It should also be possible to tailor the housings easily to different printed circuit board

dimensions, without leaving unused empty space inside the housing.

A housing for an electronic circuit is known from the publication US 5,272,593, into which a cooling frame can be inserted with a printed circuit board fixed thereto. Leaf springs are thereby fixed to the cooling frame, which are braced against studs on the housing and cause the cooling frame to exert a strong pressure on the housing wall.

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Based on this prior art, the object of the invention is therefore to create a simple and economical method for mounting a switching module.

15 These objects are achieved by the method and the switching module with the features set out in the independent claims. Advantageous embodiments and developments are set out in the dependent claims.

20 To produce a housing, the basic housing element is preferably produced by separating a hollow profile and closing the openings on the transverse sides of the basic housing elements with the cover elements.

25 As the basic housing element is produced by separating a hollow profile, the length of the basic housing element can be varied to an almost infinite degree. It is therefore possible to produce basic housing elements of different lengths from one hollow profile, which can be fitted with circuit supports 30 of different lengths. The length of the basic housing element can particularly be selected such that there is no empty volume within the housing.

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The hollow profile is preferably extrusion molded. This allows the sectional profile to be configured in a simple fashion such that a circuit support can be fixed inside the housing without further fixing means. It is thus possible for example 5 to provide recesses extending along the longitudinal axis of the hollow profile, into which self-tapping screws can be screwed to fix the cover elements. Also bearing surfaces can be provided for the circuit support in the sectional profile, which are arranged such that a circuit support with components 10 fitted on both sides can be inserted into the basic housing element.